WSDOT

Design-Build Office Management and Contract Administration

Roger Millar, Secretary of Transportation

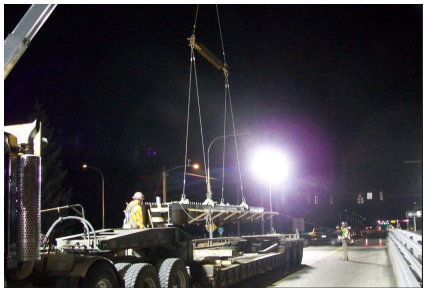
Safety

- Sign-in
- Who is CPR Qualified?
- AED
- Who will call 911?
- Evacuation
- Restrooms
- Breaks

Course Overview

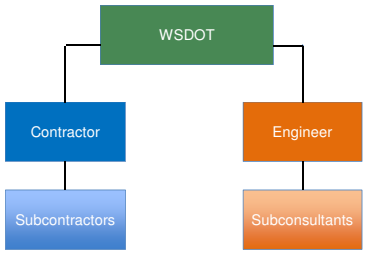
- **Design-Bid-Build**
- **Design-Build**
- **WSDOT Design-Build Contract**
- **Design Management**
- **Specific Contract Provisions**
- **Changes**
- **Quality, Testing, and Closeout**

Design-Bid-Build



WSDOT 4

Design-Bid-Build Contract Structure



WSDOT 5

Warranty of Prescriptive Specifications

- **Prescriptive Designs.**
  - Contractors provide minimal review
  - Entitled to Change Order for modifications
- **Case Study:**
  Donald B. Murphy Contractors v. State
  - Warranty: If the design is followed, a satisfactory result will follow.
  - The implied warranty of design is not a strict liability standard.

WSDOT 6

Design-Bid-Build

ADVANTAGES

- Well established and suitable for competitive bidding
- Objective Contractor Selection
- Lowest initial price
- Clearly defined roles
- Designer works directly for owner

DISADVANTAGES

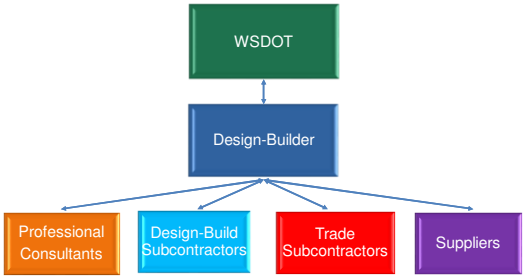
- Slower
- Owner must manage two contracts
- No Contractor involvement in design
- Initial low cost might not result in best value
- Greater potential for cost/time growth

WSDOT 7

Design-Build

WSDOT 8

Design-Build



A Project Delivery Method in which WSDOT procures both design and construction services in the same contract from a single, legal entity referred to as the design-builder.

WSDOT 9

Design-Builder Variations

- **Integrated Design-Build Firm**
- **Joint Venture**
- **Contractor Prime**
- **Engineer Prime**

WSDOT 10

Design-Build

ADVANTAGES

- Best Value Selection
- Single point of responsibility
- Encourages innovation
- Lower design error risk
- Time and often cost savings
- Earlier cost and schedule certainty

DISADVANTAGES

- Reduced owner control over design
- Challenges with scoring technical evaluation factors
- Potential higher initial cost
- Parties assume different and unfamiliar risks

WSDOT 11

Design-Build Success Factors *Fair and Balanced Contract*

- **Proactively identify risks**
- **Reasonably allocate the risks to party best able to address and mitigate the risks**
- **Clearly identify scope and requirements for successful completion**
- **Encourage, rather than prohibit communication**
- **One project, one team**

WSDOT 12

Design-Build Success Factors
Unfair Contracts

- **Restrict competition**
- **Create greater risks to the project**
- **Are more expensive**

Design-Build Risk Allocation Development

- **Risk allocation developed in collaboration with the AGC/ACEC/WSDOT Design-Build Team.**
- **Goals:**
  - Promote best practices in transportation
  - Support fair risk allocation developed in conjunction with industry input
  - Select the delivery method that is appropriate for each project
  - "Right size" the risk matrix for each project

Design-Build Success Factor
Timely and Effective Communication

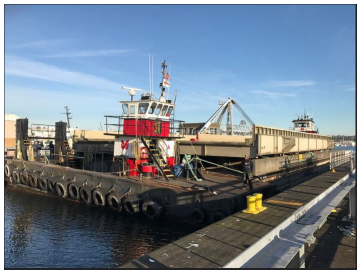
- **Co-locate where appropriate and efficient**
- **Establish effective communication vehicles if co-location is not efficient**
  - **Foster a collaborative environment**
  - **Mutually develop a realistic schedule**

Making the Mental Shift

Design-Bid-Build	Design-Build
Working in fragmented "silos"	Integrated teams
Frequently adversarial	Highly collaborative
Often Distrustful	Focused on trust
Limited communication	Open and transparent communications
Low bid price based decisions	Best value to the project

WSDOT 16

WSDOT Design-Build Contract



WSDOT 17

We have lift off . . .

- **Orientation Meeting**
  - Documentation Requirements
- **Contract Kick Off Meeting**
  - Contract Administration
  - Communications
  - Partnering
  - Practical Design Workshop
  - Close Out Task Force

WSDOT 18

WSDOT Project Team

- **Project Engineer**
- **Assistant Project Engineer**
- **Design Manager**
- **Office Engineer**
- **Lead Auditor**

WSDOT 19

Contract Structure

- **Chapter 1, General Provisions**
  - Replaces Division 1 of the Standard Specifications.
- **Chapter 2, Technical Requirements**
  - Consists of discipline-specific sections. Each section is typically broken out into the following subsections:
    - General / Scope
    - Mandatory Standards
    - Personnel Requirements
    - Design and Construction Criteria
    - Submittals

WSDOT 20

Appendices

- **Appendix A1 – the go-to appendix.**
- **Conceptual Plans**
- **WSDOT (or other) Manuals**
- **Region Policies**
- **Discipline Reports**
- **Environmental Commitments**
- **Utility Agreements**
- **As-Builts**
- **ROW plans**

WSDOT 21

Escrow Proposal Documents (EPD)

- **Definition**
  - "writings, working papers, computer printouts, charts, and any other data compilations of any nature which contain or reflect all information, data, and calculations used by the Design-Builder to determine the Proposal for this Project."
- **Purpose**
  - Preserve for litigation
- **Submitted to Escrow Company**

WSDOT 22

Project File

- **Essential tool**
- **Uniform for every project**
- **Administered by single person**
- **Tracks:**
  - Design submissions, comments, and approvals
  - Submittals
  - Communications
  - Changes

WSDOT 23

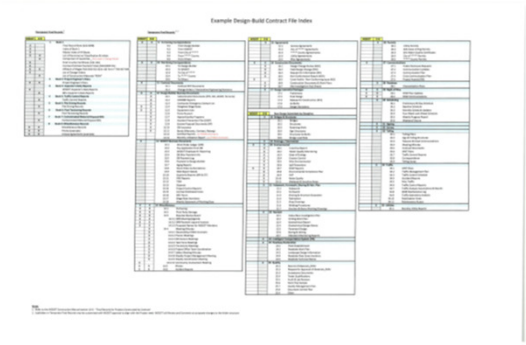
Contract File Index (CFI)

What is the CFI and why is it important?

- Basis for all document control
- Template for consistent temporary and permanent final records
- Aligns documents with the Contract Requirements
- Mirrors the DB's Document Control Plan

WSDOT 24

CFI – Temp/Perm Records



Conceptual Design

- **Basic Configuration**
  - Part of the Contract Documents
  - Proposers can rely on information
  - Proposals must be consistent with the Basic Configuration
- **Reference Documents**
  - Provides information to the Proposers to assist them in preparing Proposals
  - Designs (if any) are only to verify that Basic Configuration is constructible.

Contract Documents vs. Reference

CONTRACT DOCUMENTS

- Determine the mandatory minimums for project
- Limit "requirements" to project parameters
- Allow Proposers to innovate
- Reward excellent Proposals

REFERENCE

- Shifts risk to Proposer
- Useful information, but may be outdated
- Possible conflict with Contract Requirements

Order of Precedence

1. Change Orders and Supplemental Agreements
2. Design-Build Contract, excluding WSDOT Identified Betterments
3. WSDOT Identified Betterments
4. General Provisions (RFP Chapter 1)
5. Technical Reports (RFP Chapter 2)
6. All other Contract Documents in RFP Appendix A1
7. Design-Builder's Proposal

Betterments

- **Definition**
  - **Technical Proposal:** Any item included in the Design-Builder's Technical Proposal that clarifies the Design-Builder's intention to exceed a requirement included in the Contract Documents
  - **Utility:** Upgrade of a utility for the sole benefit of the utility owner.
- **Proposers receive more Technical Credits if the betterment adds value to the project.**
- **The Betterment is higher on the Order of Precedence.**

Partnering

- **Encouraged by WSDOT**
- **Voluntary**
- **Early in the project**
- **Facilitated**
- **Goals:**
  - Identify reciprocal goals
  - Achieve work on time/on budget
  - Prompt, equitable resolution of issues

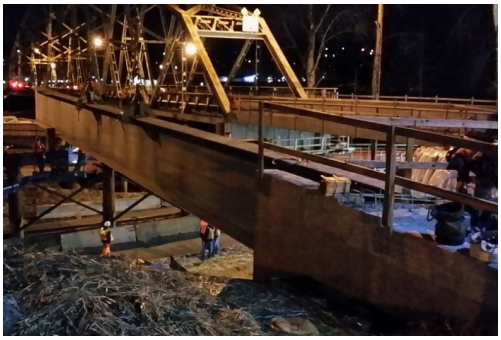
Practical Design Workshop

- **By agreement of the parties**
- **Within 7 days of contract execution**
- **Purpose:**
  - Cost reduction
  - Innovation
  - Efficiency
- **Changes are "Design-Builder Initiated Changes"**

Co-Location

- **Definition: locating both WSDOT and Design-Builder's staff in the same facility**
- **Extent varies by project**
- **Fosters collaboration and communication**
- **Facilitates "over-the-shoulder" design reviews**

Specific Contract Provisions



Design-Builder's Warranty

Higher standard than in Design-Bid-Build

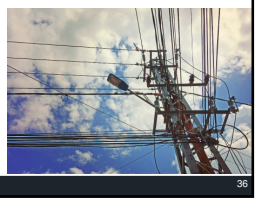
- Design Work conforms to professional standards
- Project free from defects
- Materials good quality
- Work meets contract requirements
- Project spec'd and constructed so that it can be used for its intended function.

Geotechnical Conditions

- **Geotechnical Baseline Report (GBR)**
  - WSDOT supplies this report
  - WSDOT responsible for accuracy of report
  - Proposers responsible for drawing conclusions from information
- **Supplemental Boring Report (SBR)**
  - WSDOT determines allowed number
  - Proposers request WSDOT to perform additional borings and laboratory testing
- **Additional Geotechnical Investigation**
  - Proposers responsible to perform
  - Must request approval from WSDOT

Responsibility for Utility Relocations

- **Utility relocation assigned in the Basic Configuration (Typically to DB)**
- **Public Utilities**
- **Types of private utilities:**
  - Category 1
  - Category 2



Right of Way and Access

- **WSDOT Responsibility**
  - Supply Rights of Way
  - Identify parcel owner and type of impact
- **Design-Builder Responsibility**:
  - Temporary easements
  - Any additional acquisitions proposed by the Design-Builder

WSDOT 37

Measurement and Payment

- **Invoicing**
- **Measurement**
- **Incentives**

WSDOT 38

Payment Checklist

C8811
I405 / SR167 Direct Connector
3000 E. Valley Road, Renton WA 98057

Estimate #: 10
Work Done Dates: 04/06/2017 to 05/05/2017
Estimate Payment Date: 05/17/2017

Payment Checklist

Payment Checklist	RFP Section	✓
Design-Builder		
Invoice Cover Sheet w/ signatures of the Design and Construction QA Managers	1-09.9(1).2	
Progress Report including narrative and technical report	1-09.9(1).2	
Contract Schedule update per 1-08.3(7) including .xer Primavera file verified to match the invoice	1-09.9(1).2	
Certification by Design and Construction QA Managers	1-09.9(1).2	
Invoice Data Sheets and Supporting Documents based on the price loaded Contract schedule	1-09.9(1).2	
Design Exception Report	1-09.9(1).2	
Incentive Self-Assessment	1-08.11(1).1	
If HMA adjustment requested, **Calculations and Accounting documents** required to be submitted	1-09.9(2).1	
WSDOT		
QV – verify and mutually agree with D-B on physical percentage of Work completed		
Check Schedule against invoice amounts incl. Paid TTD; Paid this Period; Previous		
Review Monthly Contract Schedule Updates	1-08.3(7)	
Check to ensure Force Account sheets are signed		
Check to ensure all CO requested are executed		
QV – check materials per D-B payment request		
Input into CAPS and print Pre-Estimate for PE signature		
PE signed off on DB requested %		
Complete WSDOT comments form and transmit back to Design-Builder		
Advise D-B that payment is approved and total amount to be paid		
Once payment is made, email all information to Document Control for distribution		

Signed by:
Print name:
Date:

WSDOT 39

Payment Checklist

- Invoice Cover Sheet
- Progress Report
- Contract Schedule Update
- Certification
- Invoice Data Sheets
- Design Exception Report
- Incentive Self Assessments

WSDOT 40

Pay Estimates / Schedules

- Cost Loaded Schedule – baseline schedule and monthly updates – review requirements in the RFP
- Rule 170 / Rule 171 – Lump Sum Bid Items
- Pay Estimates – payment justification and documentation (examples to follow) based on State and Federal Audits and lessons learned
- Paynotes – structure breakdown

WSDOT 41

Pay Estimates / Schedules

CRR11
HOV / SR167 Direct Connector
3000 E Valley Road, Renton WA 98057

Estimate #:
Work Done Dates:
Estimate Payment Date:

Payment Checklist

Payment Checklist	RFP Section	✓
Design-Builder		
Invoice Cover Sheet w/ signatures of the Design and Construction QA Managers	1-09.9(1).2	
Progress Report including narrative and technical report	1-09.9(1).2	
Contract Schedule update per 1-08.3(7) including .xer Primavera file verified to match the invoice	1-08.9(1).2	
Certification by Design and Construction QA Managers	1-05.9(1).2	
Invoice Data Sheets and Supporting Documents based on the price loaded Contract schedule	1-09.9(1).2	
Design Exception Report	1-09.9(1).2	
Incentive Self-Assessment	1-08.1(1).1	
If HMA adjustment requested, **Calculations and Accounting documents** required to be submitted	1-09.9(2).1	
WSDOT		
QV – verify and mutually agree with D-B on physical percentage of Work completed		
Check Schedule against Invoice amounts incl. Paid YTD, Paid this Period, Previous		
Review Monthly Contract Schedule Updates	1-08.3(7)	
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Check to ensure all CO requested are executed		
QV – check materials per D-B payment request		
Input into CAPS and print Pre-Estimate for PE signature		
PE signed off on DB requested %		
Complete WSDOT comments form and transmit back to Design-Builder		
Advise D-B that payment is approved and total amount to be paid		
Once payment is made, email all information to Document Control for distribution		

Signed by:
Print name:
Date:

WSDOT 42

Pay Estimates / Schedules

Contract 008811
I405 / SR167 Direct Connector
3000 E Valley Road Renton,WA 98057
Design-Builder Contract Payment

A review of Contract Payment #06 was completed on 01/20/2017 in the Construction Field Office. Duska Dietzway utilized the Design-Builder's Pay Estimate submittal which included an invoice cover sheet, progress report, contract schedule update, invoice data sheets and supporting documents, and a report narrative to justify payment.

Inspector Daily Reports were reviewed for the timeframe covered in this Pay Estimate to ensure the work aligned with the schedule update. WSDOT performed a field visit to verify the percentage of work requested in the Pay Estimate for each item, was in alignment with the work completed in the field.

The Project Engineer, Sharif Shaklawun, has concluded that the lump-sum amount, as requested by the Design-Builder for Pay Estimate #06, is justified.

Duska Dietzway OE _____ Date _____

Sharif Shaklawun PE_____ Date _____

WSDOT 43

Measurement

- **Contract Details Requirements**
- **Specific provisions for:**
  - Batching Scales
  - Platform Scales
  - Belt Conveyor Scales
  - Scale Verification Checks

WSDOT 44

Contract Incentives

Purpose: Encourage superior performance

- Requires clear and constant superior performance.
- Excellent tool to manage significant risks.
- Periodic Incentive: measured and paid monthly
- Project Incentive: measured and paid at Substantial Completion

WSDOT 45

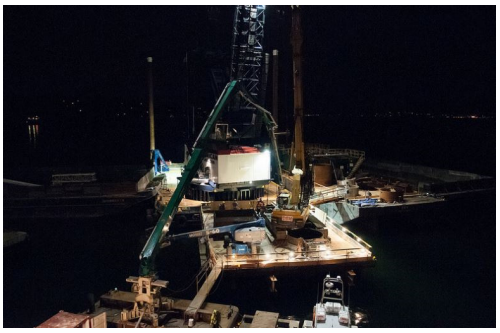
Incentives Best Practices

- **Should correspond to unique project risks**
- **Incentive criteria must be:**
  - Objective
  - Definable
  - Quantifiable
  - Measure Actual Achievements
  - Reward **SUPERIOR** not average performance

Schedule

- **Preliminary Baseline Schedule**
- **Original Baseline Schedule**
- **Current Schedule**
- **Revised Schedule**
- **Monthly Progress Schedule**
- **As-Built Schedule**
- **Recovery Schedules**

Design Management



Design-Builder's Responsibility for Design

- **Design-Builder is the Engineer of Record for the Project**
- **At the conclusion of the project, the Design-Builder is responsible for all defects in design, including Basic Configuration.**
- **Design-Builder must review and discover defects in all documents provided by the Owner.**

Working Drawings

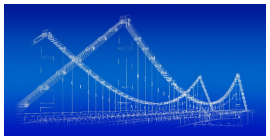
- **Categories of Working Drawings**
  - Type 1: For WSDOT Information Only. Must submit 7 days before Work performed
  - Type 2: For WSDOT Review and Comment.
  - Type 2E: Type 2 with engineering
  - Type 3: Engineer of Record reviewed and submitted to WSDOT for review and comment
  - Type 3E: Type 3 with engineering.
- **All Working Drawings are Type 3 unless specifically referenced in writing.**
- **Except for Type 1, WSDOT has 14 days to review and comment.**

Typical Review Process

- Formal Submittals:
  - Preliminary *(Review)* + Final *(Review)* ⇨ RFC *(FYI only)*
  - 14 Calendar days turnaround cycle
  - WSDOT DM compiles & checks comments
  - DB address comments & send responses back to WSDOT
  - Comment resolution meeting (all parties present)
- Informal:
  - Weekly Task Force Meetings
  - Over the shoulder review
    - What is it?
    - Why use it?

Design Management

- **Design reviews require a quicker turnaround than in DBB.**
- **Limited to evaluating compliance with mandatory requirements.**
- **Allow for flexible approach**
- **Co-location can expedite the review process.**
- **Reviews should foster communication**



WSDOT 52

WSDOT Comments and Approvals

- **Comments:**
  - Standard = 14 days
  - Expedited possible, but should be rare
- **Approval Standard:**
  WSDOT is in agreement with the specific approach, proposal, plan, schedule, analysis or design and the submittal appears to conform to the Contract Documents.
- **Approvals DO NOT shift responsibility to WSDOT.**

WSDOT 53

Design Submittals

What submittals to expect in the first 30-45 days of the project?

- TMP/TIMP
- QMP
  - Design
  - Document Control Plan
  - Construction
- ECP
- Preliminary Design Submittals

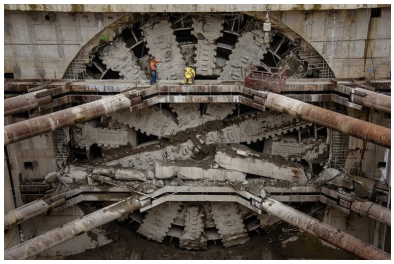
WSDOT 54

Design Manager Lessons Learned

- Learn the contract inside and out
- Get involved early
- Understand prior decisions and commitments
- Identify & establish relationship with reviewers (Including HQ & FHWA)
- Lead Kick-Off meeting with reviewers and Admin team

WSDOT 55

Changes



WSDOT 56

Change Orders

- Design-Build does not eliminate change orders
- Possible Changes:
  - Necessary Change in the Basic Configuration
  - Differing Site Condition
  - WSDOT or Design-Builder Initiated
- ***Changes typically occur during design rather than construction***

WSDOT 57

WSDOT Initiated Changes

- **WSDOT may require changes**
- **All changes to the Technical Proposal must be authorized by WSDOT**
- **WSDOT Initiated Changes are processed the same as in DBB.**
  - Must be in writing
  - Design-Builder cannot proceed unless it receives the written CO approved by WSDOT

Changes Initiated by Design-Builder

- **When the Design-Builder identifies potential savings.**
- **Approval is in WSDOT's sole discretion**
- **Types of DB Initiated Changes:**
  - Idea derived from unsuccessful Proposer's Proposal
  - Equal or better than the Contract requirements
  - Practical Design Workshop
  - Does not fit categories above
- **Administration is similar to that in a DBB contract.**

Differing Site Conditions: Definition

- **For non ATC work:**
  a. Actual subsurface or latent physical conditions encountered at the site that are substantially or materially different from the conditions identified in the GBR, GDR, or SGDR and which are not discoverable from a reasonable investigation or analysis of the site; or
  b. Physical conditions of an unusual nature, differing materially from those ordinarily encountered and not inherently in the type of work in the contract.
- **For ATC Work:**
  a. Same as item a. above, but based off of Design-Builder's Geotech investigation that were not discoverable from a reasonable investigation and analysis of the site; or
  b. Same as item b. above.

Differing Site Conditions: Risk Sharing

- Design-Builder has the burden of proof.
- Design-Builder must pursue insurance.
- Actual, reasonable cost above $ threshold.

WSDOT 61

Necessary Basic Configuration Changes

- Definition: Any change in the Basic Configuration which is necessary to correct an error, omission, inconsistency or other defect in the Basic Configuration.
- Contract is adjusted if the change increases or decreases the cost or time to complete the Work

WSDOT 62

Matters Not Eligible for Change Orders

- Section 1-04.4(5) lists items not eligible for change order.
- Design-Builder assumes full risk for these items.
- Includes
  - Errors in design
  - Errors in the Design-Builder's schedule
  - Subcontractors
  - Untimely delivery
  - Delays in government approval

WSDOT 63

Claims

Process:

- Partnering
- Communication with WSDOT Engineer
- Protest Change Order
- Disputes Review Board (larger projects)
- Claim
- Alternative Dispute Resolution
- Arbitration (under $250,000)
- Litigation (over $250,000)

Dispute Review Board

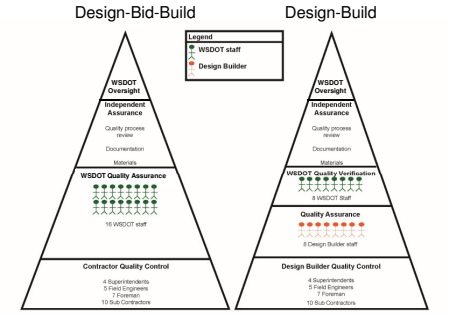
- **Assists with resolution of disputes**
- **Three members**
  - One selected by WSDOT
  - One selected by Contractor
  - Third selected by the first two
- **Process**
  - Dispute submitted
  - Hearing
  - Board drafts report
    - Consensus preferred
    - Dissenting member report.

Quality, Testing, and Close Out

Quality Assurance/Quality Control

- **Design: QA/QC starts with the design process**
  - Design Quality Control
  - Design Quality Assurance
- **Construction: The Design-Builder performs duties usually performed by WSDOT in DBB:**
  - Construction Materials Quality Control
  - Construction Materials Quality Assurance

Design-Build Office Structure



Quality Verification

WSDOT performs verification related activities to assure that the Design-Builder is maintaining quality and performing its QA responsibilities

- Design Quality Verification
- Materials Testing Quality Verification
- Materials Independent Assurance

CATS

- **Construction Audit Tracking System ("CATS") is WSDOT's software tool for Quality Verification audits.**
  - The WSDOT Team should prepare for the audit from the beginning of the project.
- **Checklists are created from the RFP**
- **Audit Frequency**
  - 2-5 x week for first 6-9 months (or throughout for shorter projects)
  - 1-3 x week once confident in process

WSDOT 70

NCR's and NCI's

- **Nonconformance Reports (NCR)**
  - Written by the Design-Builder
  - Usually product or workmanship
- **Nonconforming Issues (NCI)**
  - Written by WSDOT
  - Usually process related

WSDOT 71

Stages of Completion

- **Substantial Completion**
- **Response by WSDOT**
- **Physical Completion**
- **Contract Completion**

WSDOT 72

Close Out Task Force

- **Oversees and provides input on Final Records**
- **Minimum members:**
  - Project Quality Manager
  - Document Control Manager
  - Project Manager
  - Design Manager
  - WSDOT Engineer
- **Meetings**
  - Monthly from NTP to Substantial Completion
  - Weekly from Substantial to Final Completion

WSDOT Design-Build Training

The WSDOT Design-Build Training Courses have the following modules:

- **In Person Courses:**
  - Design-Build 101 *(Prerequisite to this course)*
  - Design-Build Startup and Request for Qualifications ("RFQ") Development
  - Design-Build Instructions to Proposers (ITP) and Request for Proposals (RFP) Development
  - Design-Build Office Management and Contract Administration
  - Design-Build Closeout Process
  - Environmental in Design-Build
  - Quality in Design-Build
- **Online Courses:**
  - Statement of Qualifications Evaluation
  - Proposal Evaluation
  - Alternative Technical Concept Review Process

Headquarters Design-Build Contacts

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Resources

- WSDOT Design-Build Web Page
  http://www.wsdot.wa.gov/Projects/delivery/designbuild/Default.htm
- Joint Transportation Committee of Washington State Legislature Design-Build Study
  http://leg.wa.gov/JTC/Pages/Design-Build-Study.aspx
- WSDOT Design-Build Templates
- http://sharedot/eng/cn/hqconstr/dpb/DB%20Templates/Forms/AllItems.aspx
- Design-Build Institute of America Best Practices
  https://www.dbia.org/resource-center/Pages/Best-Practices.aspx
- Design-Build Institute of America Transportation Conference
  www.dbia.org

WSDOT 76

Questions

WSDOT 77